

SPIES LIKE US

AUTHOR: TOM REINHARDT '67 is associate chief scientist for technical threat at the National Air Intelligence Center, Wright-Patterson Air Force Base in Dayton, Ohio

Next time you think about foreign intelligence, forget handsome spies, glamorous women, fast cars and explosion-a-minute excitement. Instead, consider Dilbert.

Thousands of foreign intelligence technical experts employed by the Department of Defense spend their days toiling away in cubicles. They are the scientists and engineers whose work has a direct and immediate impact on military operations and national policy. Trust me. These people hardly ever blow up anything (at least not on purpose), and they definitely are not qualified to romance enemy agents. Let me tell you what it's really like for most of us in this line of work.

Engineers in foreign intelligence try to figure out how foreign military systems work and how potential adversaries plan to use them against the United States. Through their work, combat troops know what to expect in battle and U.S. weapon developers decide what new systems to build.

There is one glitch. Our enemies work hard to prevent us from getting our hands on their weapon systems. So we have to apply basic principles of science and engineering to postulate what they look like, how they function, what their weak points are and how they'll be used.

It's really reverse engineering with a twist. Since we rarely have the actual hardware to take apart and test, we have to figure out how it works from whatever snippets of information we can get. It's like trying to put together a jigsaw puzzle with most of the pieces missing. Our sources range from the best of high-tech equipment, like air-, space-, maritime- and land-based remote sensing systems, to such plebian items as small-circulation journals in any of several dozen languages.

Even with this sleuthing, we never find all the hard data we need. We finish the job by making extensive use of mathematical modeling and engineering judgment to fill in the blanks. Our engineers routinely flesh out their assessments



combining universal laws of physics and engineering with a feel for how foreign engineers design and build things, a skill developed over many years of surreptitiously looking over the shoulders of foreign designers.

If our judgment is faulty, our forces will go into combat with inappropriate tactics and equipment, policy makers will base their decisions on bad information and weapon systems will be built to defeat the wrong threat. The challenge of getting it right makes technical intelligence scary, but it also offers enough excitement and satisfaction for even the most debonair among us.

Now if you'll excuse me, a pressing assignment awaits in my cubicle. "Coming, Money Penny." ■